

# WELLINGTON ASTRONOMICAL SOCIETY



The Eilersie meteorite photo supplied by Carter Observatory

**MONTHLY MEETING: Meteorites**  
**WEDNESDAY 10<sup>th</sup> OCTOBER 2007**  
**7.30 PM**  
**SCIENCE HOUSE**  
**TURNBULL STREET**  
**THORNDON**  
**WELLINGTON**

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### **Meteorites by Joel Baker**

Meteorites that arrive at Earth from the asteroid belt between Mars and Jupiter are our oldest samples of the Solar System and preserve a remarkable and unique record of the formation of the Sun and the planets ca. 4.567 billion years ago. Different meteorites contain a record of the processes of solid formation and planet building in the infant Solar System. I will describe how we use isotopic forensics at Victoria University of Wellington to study these meteorites, which has two main objectives. Firstly, we use isotopic clocks to date meteorites in order to establish a high-resolution timescale for solid, planet and comet formation in the infant Solar System. We then measure the isotope ratios of selected elements in these meteorites to high precision. Because specific isotopes of certain elements are produced by certain nuclear reactions in different types of stars, this allows us to build a picture of the environment in the vicinity of the proto-Solar System and constrain the astrophysical setting necessary for building stellar and planetary systems like our own.

### **2007 AGM**

The 2007 annual general meeting of the Wellington Astronomical Society will be held on Wednesday 14th November at 7.30pm at Science House, Turnbull Street, Thorndon. The WAS Constitution states that "Notice of any formal resolution to be moved at the Annual General Meeting, signed by the mover and seconder, shall be lodged with the General Secretary not less than 28 days prior to that date, Wednesday 17<sup>th</sup> October. Lesley Hughes Ph 472-5086 .hpwas@hugpar.gen.nz

### **COUNCIL NOMINATIONS**

It is the hallmark of a vigorous society that Council positions should be hotly contested. If you have good ideas you want to see progressed then get nominated. Wellington Astronomical Society is looking for a new General Secretary and President as well as more committee members. If all positions are filled then the task becomes easier and WAS can become more active in the local community. Nomination forms must be received by WAS Council member Lesley Hughes Ph 472-5086 [.hpwas@hugpar.gen.nz](mailto:hpwas@hugpar.gen.nz) by Wednesday 17<sup>th</sup> October. A nomination form is given here and more will be available at the October meeting. The person nominated must sign the form. There are some exciting things happening in local astronomy and this is your chance to make your mark.

#### **Nomination Form**

<b>Nominee</b>	
<b>Signature</b>	
<b>Date</b>	
<b>Preferred Position(s)</b>	
<b>Proposer</b>	
<b>Seconder</b>	

## Galactic Circle for October



Rocket Science at the Treehouse

Fun experiments to do with Energy!

### CHARGED UP!

You need a comb and tap water.

1. Turn the tap on so a very thin stream of water flows from it.
2. Comb your hair for about 30 seconds
3. Hold the comb near the stream of water without touching it

WHAT HAPPENS? WHY?

### HOT STUFF

You need a balloon and a magnifying lens.

1. Blow up the balloon and tie it closed.
2. Mark a spot on the balloon with a felt pen.
3. Hold the magnifying lens so the Sun's rays are focused directly on the spot.

WHAT HAPPENS? WHY?

### MOVING UP!

You need a clear glass  $\frac{3}{4}$  filled with water, water, raisins, 2 tbsp baking soda and 2 tbsp vinegar.

1. Drop the raisins into the water
2. Stir in the baking soda until it dissolves

WHAT HAPPENS AND WHY?

ANSWERS AT GALACTIC CIRCLE: WEDNESDAY 17 OCTOBER.

## ORDER ASTRONOMICAL POCKET DIARIES (WELLINGTON 2008) FROM DON S. MCDONALD , NOW.

Diary includes daily rising + settings of the moon ( % illuminated, declination, distance, azimuth, etc.) Plus weekly data for planets, occultations, conjunctions, meteor showers, historical, religious, political events, anniversaries of famous artists and scientists.

(Orbitograph diagram) 1 week to a Dbl-page. (Author N. Haley.) e-mail :

[MCDOnewt@yahoo.co.nz](mailto:MCDOnewt@yahoo.co.nz), ph 04/389-6820 cost \$NZ 12.00 each, cheque.

Please supply your name, ph. number, email + postal address.

## What's in the sky in October: Information provided courtesy Carter Observatory

### Planets

**October** is a fair month for viewing the planets. Jupiter, Mars, Venus and Saturn are visible all month. Mercury will be visible for the first half of the month.

**Mercury** will be visible in the Western evening sky for the first half of the month. At the start of October it sets at 21 43, by October 19 at 20 42 (an hour before Sunset) and at Sunset by October 24. Mercury is in the constellation of Virgo. Its magnitude rapidly fades from 0.1 to 5.5 by October 24.

**Jupiter** will be visible for the first third of the night. At the start of the month it sets at 01 04 and at 23 28 by month's end. Jupiter is in the constellation of Ophiuchus, in which it remains until 2007 December. Its magnitude slightly fades from  $-2.0$  to  $-1.9$  by the end of October.

**Mars** will be visible for the last half of the night. At the start of October it rises at 02 14 and at 01 03 by month's end. Mars is in the constellation of Gemini. Its magnitude brightens from  $-0.1$  to  $-0.6$  during the month.

**Venus** will be visible in the Eastern morning sky. At the start of the October it rises at 05 00 and at 04 23 by month's end. Venus is in the constellation of Leo. Venus slightly fades from  $-4.5$  to  $-4.4$  during October.

**Saturn** is visible in the Eastern morning twilight sky. It rise at 05 46 at the start of October and at 03 56 by month's end. Saturn is in the constellation of Leo, in which it remains until September 2009. Its magnitude slightly fades from 0.7 to 0.8 during the month.

All times are for Wellington unless otherwise stated. Other centres may vary by a few minutes.

### Phases of the Moon

Last Quarter – October 3 at 23 06. New Moon – October 11 at 18 01

.First Quarter – October 19 at 21 33. Full Moon – October 26 at 17 52.

### Comets

No bright **comets** are predicted to be visible during October.

### Meteor Showers

Two different **meteor showers** are active in October.

The Taurids South shower is active throughout the month and up to November 25, but does not reach a maximum until early November, when up to 10 meteors an hour is expected. The mean magnitude of the meteors is 2.3, and the radiant is at R.A. 03h 20m and Dec  $+14^\circ$ . The radiant is to the West of Aldebaran (alpha Tauri) and to the South of the Pleiades (M45, NGC 1432), which is visible for the last two thirds of the night.

The Orionids shower is active between October 3 and November 7, with a maximum on October 22, when about 25 meteors an hour are expected. The mean magnitude of the meteors is 2.9, and the radiant is at R.A. 06h 20m and Dec  $+16^\circ$ . The radiant is near gamma Geminorum (Alhena or Almeisam), which is about half way between Betelgeuse and Pollux (the brighter of the twins, Caster and Pollux), which is visible for last half of the night.

## Diary of Astronomical Phenomena: Information provided courtesy Carter Observatory

- Oct 10 Venus close to Regulus in morning sky.
- 11 New Moon at 18 01.
- 12 Mercury stationary against the background stars at 20 00, as its motion changes from an Easterly to a Westerly direction.
- 13 Moon at apogee (furthest from the Earth) at 23 00 (Distance = 0.0027172 AU = 406,490 km).
- 16 Venus  $3^\circ$ S of Saturn in the morning sky.
- 24 Mercury in inferior conjunction (between the Earth and Sun) at 13 00.
- 26 Full Moon at 17 52.
- 27 Moon at perigee (closest to the Earth) at 01 00. (Distance = 0.0023847 AU = 356,750 km).
- 29 Venus at greatest Westerly elongation from the Sun ( $46^\circ$ ) at 04 00.

### Sunrise/Sunset

Alongside are Sunrise and Sunset times for each Monday of the month for Wellington. The table also gives the time of Transit (Trans), the maximum Altitude (Alt) and the Azimuth (Az). The time of transit is when the Sun crosses the local North-South meridian from East to West. At the time of transit, shadows will point South. The transit time is also the time at which the Sun is at its maximum altitude (Alt). Assuming your horizon is at sea level, the Azimuth is the position on the horizon where the Sun rises or sets. The angle is measured from true North (not magnetic North), towards the East for Sunrise and towards the West for Sunset. An azimuth of 90°, for Sunrise, means the Sun rises exactly in the East and for Sunset the Sun sets exactly in the West

For azimuths less than 90°, the Sun rises to the North of East and sets to the North of West (Winter months). For azimuths greater than 90°, the Sun rises to the South of East and sets to the South of West (Summer months). Other New Zealand centres may differ slightly from their Wellington below.

Date	Rise	Set	Trans	Alt	Az
Oct	H M	H M	H M	°	°
<b>1</b>	06 56	19 26	13 11	52	94
<b>8</b>	06 45	19 33	13 09	54	98
<b>15</b>	06 33	19 41	13 07	57	101
<b>22</b>	06 23	19 49	13 06	60	105
<b>29</b>	06 13	19 57	13 05	62	108

### Moonrise/Moonset

The table below gives the Moonrise and Moonset times for Wellington for the month. The times for other New Zealand centres may deviate by up to 30 minutes, and this difference will vary during the month. (Unfortunately it is not possible to estimate this difference by consulting the Sunrise and Sunset tables above as the Sun differences between Wellington, and other centres bear little resemblance to the Moon differences because of the Moon's declination).

In the table, we include the Azimuth (Az) that the Moon rises and sets on the horizon. It assumes your horizon is sea level. Azimuth is measured in degrees from True North (not Magnetic North) either towards East or West depending on whether it is for Moonrise or Moonset. So for an Azimuth of 90°, the Moon will rise exactly in the East and set exactly in the West. For Azimuths less than 90°, the Moon will rise to the North of East and set to the North of West. Similarly, for Azimuths greater than 90°, the Moon will rise to the South of East and set to the South of West.

Date	Rise	Az	Set	Date	Rise	Az	Set	Date	Rise	Az	Set
Oct	H M	°	H M	Oct	H M	°	H M	Oct	H M	°	H M
<b>1</b>	-- --	53	09 03	<b>12</b>	06 38	107	20 44	<b>23</b>	16 10	96	04 28
<b>2</b>	01 14	52	09 54	<b>13</b>	07 01	114	21 46	<b>24</b>	17 26	86	04 52
<b>3</b>	02 21	51	10 56	<b>14</b>	07 27	120	22 50	<b>25</b>	18 45	77	05 16
<b>4</b>	03 15	53	12 04	<b>15</b>	07 59	125	23 52	<b>26</b>	20 07	68	05 43
<b>5</b>	03 58	57	13 15	<b>16</b>	08 38	128	-- --	<b>27</b>	21 30	60	06 15
<b>6</b>	04 31	63	14 25	<b>17</b>	09 25	129	00 51	<b>28</b>	22 52	54	06 54
<b>7</b>	04 57	70	15 32	<b>18</b>	10 21	128	01 44	<b>29</b>	-- --	52	07 42
<b>8</b>	05 20	77	16 37	<b>19</b>	11 24	125	02 26	<b>30</b>	00 06	52	08 42
<b>9</b>	05 40	85	17 39	<b>20</b>	12 32	120	03 04	<b>31</b>	01 07	52	09 52
<b>10</b>	05 59	93	18 40	<b>21</b>	13 44	113	03 36				
<b>11</b>	06 18	100	19 42	<b>22</b>	14 56	105	04 04				

Accurate Sunrise/set and Moonrise/set times for any location, in New Zealand or anywhere in the World, are available from Carter Observatory. Other data, such as the position in the sky of the Sun and Moon (or planets) at a particular time, twilight times, illumination from the Sun or Moon, can also be supplied. There may be a charge for this information.

## Upcoming Star Parties

We often post up-to-date information about upcoming star parties on the society's announcements' email group. If you'd like to join, send a blank email to: [announce-subscribe@was.org.nz](mailto:announce-subscribe@was.org.nz).

**The Pauatahanui Star Party** will be held on Saturday October 6th. Observing will commence after dark. The Phone number at Pauatahanui is 021-102-6056

**The Gifford Observatory** star party is on Saturday October 13th from 8-10pm. For more details contact Duncan Hall ph 474-5350 cell 021-615-905 email [duncan.hall@computer.org](mailto:duncan.hall@computer.org)  
Please note that mobile charges may apply when you phone some of these numbers

### **Carter and Thomas King Observatory**

Although Carter Observatory is closed Ross Powell will be at the TKO every night suitable for observing between Wednesday and Saturday each week.

Contact Ross Powell Ph 389-9765, email [rpowell@was.org.nz](mailto:rpowell@was.org.nz).

Carter Observatory is looking for casual staff fluent in astronomy and some Te Reo Maori. For more details contact Vicki Irons Ph 970-5215 email [vrons@was.org.nz](mailto:vrons@was.org.nz) for more details .

### **2008 RASNZ Conference Information taken from Royal Astronomical Society of New Zealand . Email Newsletter Number 85, 23 September 2007**

The Conference Hosts, Canterbury Astronomical Society and the RASNZ Standing Conference Committee are now planning for the 2008 RASNZ Conference and we look forward to seeing many of you at Lake Tekapo next year. If you have a 2008 Diary or Planner please note the dates now 23 - 25 May. This is a few weeks earlier in the year than recent conferences and it will be necessary to book early. Registrations forms will be posted on the RASNZ website <http://www.rasnz.org.nz/> as soon as they are available. The conference will be focusing on the dark skies of the region and the proposal to form a Dark Sky Heritage Park of the Mackenzie Basin.

### **Special conference workshop - CCD Photometry Information taken from Royal Astronomical Society of New Zealand . Email Newsletter Number 85, 23 September 2007**

A special workshop will be held on Friday 23rd May 2008 for those interested in CCD Photometry. This workshop introduces you to the principles and practice of CCD photometry as applied to brightness measurements of variable stars and asteroids. The technique to be studied is unfiltered differential time-series photometry, the simplest of all CCD photometric methods yet the one most widely used by amateurs. Further details go to the RASNZ website <http://www.rasnz.org.nz/> and follow the 2008 Conference link. The workshop is strictly limited to 20 persons so you are advised to pre-register your interest by sending an email to Pauline Loader at [varstar@rasnz.org.nz](mailto:varstar@rasnz.org.nz) to have a place reserved.

### **Call for Papers Information taken from Royal Astronomical Society of New Zealand . Email Newsletter Number 85, 23 September 2007**

Now is the time to start thinking about your presentation at the RASNZ Conference. We would particularly like to hear from you if you have worked or observed at Mt John, but presentations from others will also be welcome. Conference paper submission forms are available on the RASNZ website. Send your submission to [Conferences@rasnz.org.nz](mailto:Conferences@rasnz.org.nz)

### **How to receive your WAS newsletter by email**

At our last AGM, the incoming council was asked to set up a system where WAS members could receive their newsletter over the internet (rather than by post).if you wish to receive your newsletters this way, then please send an email to [newsletter-subscribe@was.org.nz](mailto:newsletter-subscribe@was.org.nz) with your full name in the body of the email (a subject line is not required).I need your name in the email as it is not clear from some email addresses who the email is actually coming from.

You should then receive an automatic reply, asking you to confirm you want to subscribe (and to check your email address is okay). I (as moderator) will then get a request to subscribe

you. After I okay your subscription you should get another message telling you it's been done. When each newsletter becomes available, I will email a short message to all subscribers to that effect and provide a link to the newsletter. In this way you can download the newsletter at your own convenience. The newsletters will be in pdf format, and are typically 1 - 2MB in size.

Note that this is only intended for current WAS members, which is why I have to okay each subscription request. The only exceptions will be for companies that advertise in the newsletter or other astronomical societies that swap newsletters with us. Further note that for the first few months you will also continue to receive your newsletter in the post. Once we're confident the system is working well, you will only receive the newsletter via email

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**COUNCIL OF THE WELLINGTON ASTRONOMICAL SOCIETY INC.**

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### Stardate North Island 2008 Information taken from Royal Astronomical Society of New Zealand . Email Newsletter Number 85, 23 September 2007

Stardate will be held at Tukituki, near Havelock North from Thursday January 10 - Monday January 14 2008 For details see <http://www.astronomynz.org.nz/stardate/expression-of-interest.html>

### Stardate South Island 2008. Information taken from Royal Astronomical Society of New Zealand . Email Newsletter Number 85, 23 September 2007

Stardate South Island will be held at Staveley, inland from Christchurch (a long way inland!), on Feb 15-17, Friday to Sunday. Staveley is a dark-sky site with cabins, kitchen, lecture theatre and camping ground. More details in the next Newsletter

### Te Raekauhau Point victory at the Environment Court

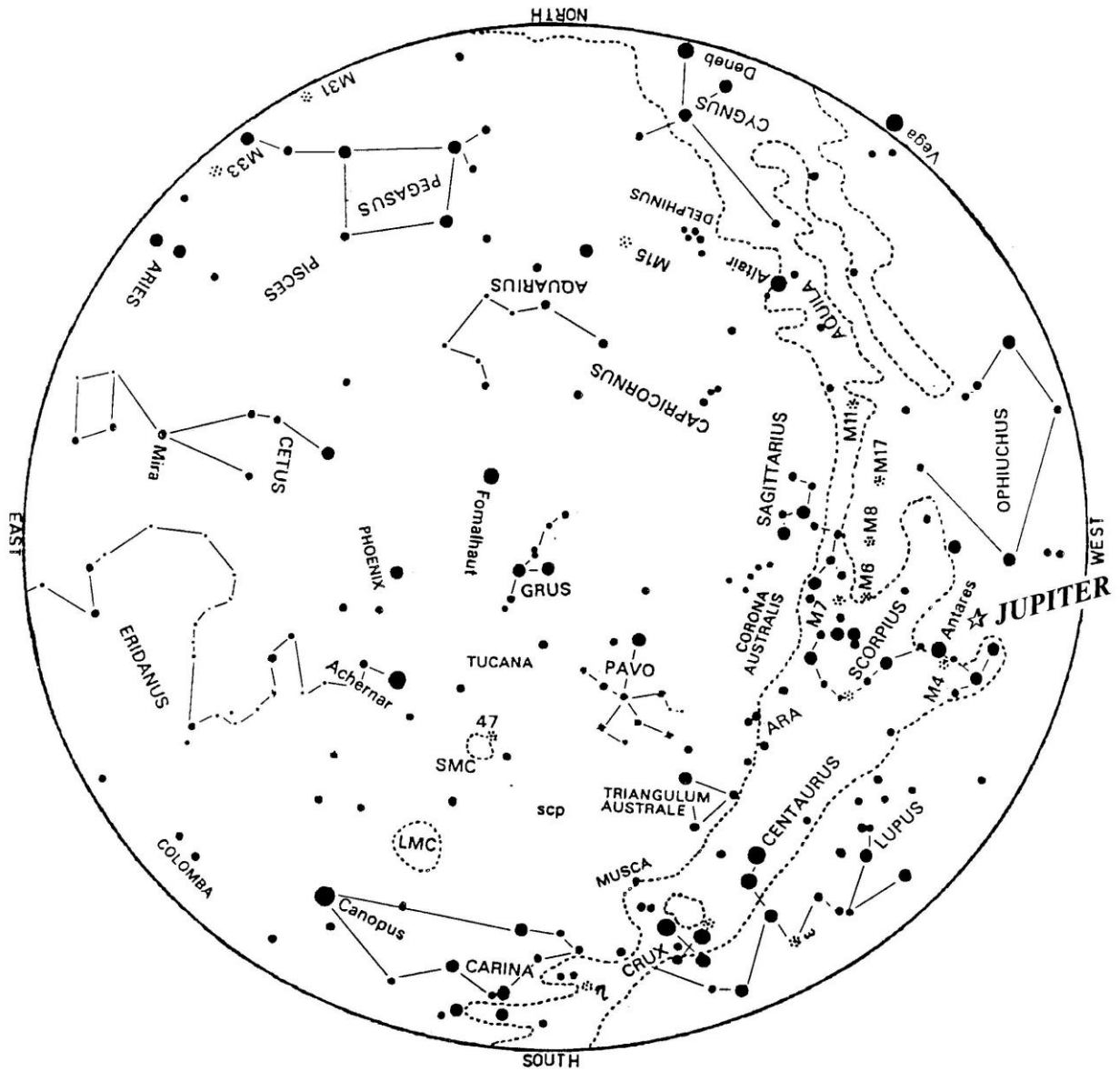
We hope Te Raekaihau-now saved from the developer's ambitions- also becomes a starlight/dark sky preserve.

### Phoenix Society Almanacs for sale

The Phoenix Astronomical society are now in the process of taking orders for *The New Zealand Almanac* 2008. The retail price is \$20 + p&p. Bulk prices are available. The almanac is a beautiful calendar with wonderful photographs taken by New Zealand astronomers. Every year the photographs seem to become better and this coming year is no exception. The almanac is also packed with interesting information on astronomical events and information presented in an interesting and easily accessible calendar format. Almanacs make wonderful Christmas presents, so consider giving them as Christmas stocking fillers. Order forms will be available at the October Wellington Astronomical Society meeting otherwise send the details of your order to Almanac P.O. Box 156 Carterton, 5743

**SKY MAP PROVIDED BY CARTER OBSERVATORY**

This chart shows the sky as it appears at about 22 00 for ~October 15.



**How to Use the Sky Charts**

To use the sky chart hold it up to the sky so that the direction in which you are looking is at the lower edge of the map. For example, if you are looking at the western horizon then the map should be held so that the "WEST" label is at the lower edge. The altitude and direction of the stars and planets will then be correctly shown. The centre of the chart will be directly overhead. The above chart is for 21:00 NZST, but other month's charts, from previous WAS Newsletters, can be used at other times of the night. The table below indicates which month's chart, from back copies, can be used at other times during this month.

For this time of the night:	20 00	00 00	02 00	04 00	06 00
Use this month's charts:	Sep.	Nov.	Dec.	Jan.	Feb.

Note that although the stars will be correctly positioned, the planets will not be correct as they move against the background stars from month to month.